

Virginia Gardening

with Jim May

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Summer insect damage is showing itself now

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Some insects that damage plants make a big splash each year and there is no doubt they have arrived. The Japanese beetle (*Popillia japonica*) is a good example of this type of pest. Not only do the adults eat some of our more precious and beautiful plants, the larvae damage our lawns both before and after the adults do their dirty work. They have been very unkind to several of my favorite plants. My littleleaf linden (*Tilia cordata*) has been hard hit as have my plum and peach trees. I don't grow roses, so at least I have been spared that indignation.

These voracious pests were probably introduced into the U.S. in the early 1900s as grubs in soil around roots of imported trees. Now they are seemingly everywhere, damaging ornamentals, fruits and some vegetables, most notably sweet corn. Trapping these insects and spraying to keep them at a manageable level seems to be a constant summer chore.

As you drive the highways this time of the summer in Virginia you may have noticed major damage to black locust trees (*Robinia pseudoacacia*). Entire stands of trees have turned brown. These tough native trees are attacked every year by an insect called the locust leafminer (*Xenochalepus dorsalis*). The adult female beetle lays 3 to 5 eggs in a pile on the underside of the leaves in the spring. The larvae hatch and burrow into the leaf, feeding on the inner layers of the leaves, tunneling through and making a mine as they go. The mine starts out small, but it is gradually enlarged until most or all of the leaf is affected and turns brown as the leaf dries out. These brown, damaged leaves cling to the tree, giving the tree a blighted look.

Leaves may appear like they are just one layer of green cells, but they are really made up of several microscopic layers and each has a function. The upper and lower outer layers, or epidermis, are covered by a waxy coating called the cuticle. The cuticle protects the leaf from some insect and disease damage and keeps the leaf from drying out. Some leaves have much thicker cuticles than others.

Sandwiched between the epidermal layers is the mesophyll, a more complex layer that consists of several cell types including palisade cells. The palisade cells are long columnar cells lying just beneath the upper epidermis. They are packed with chloroplasts, the cells where photosynthesis takes place.

The larvae of the locust leafminer are so tiny that they can burrow through the layers of the leaf, eating and doing damage as they go. The larvae pupate in the leaf and emerge as adults in July. The adults initially feed on the lower surface of leaves, skeletonizing and chewing small holes.

There are two generations a year in Virginia. The second-generation adults will emerge in late summer and seek a site for overwintering. The adults overwinter in bark crevices and leaf litter on the ground. About the time the leaves start to unfold in the spring the adults become active. They mate and lay eggs on the new leaves. After the larvae hatch they feed voraciously in one leaf, tunneling through and creating a mine.

There is really no large-scale control for this pest. Black locust trees are not usually planted as ornamentals, but are highly prized for their dense wood, used as fence posts, flooring and firewood. If you do have a few black locust trees and would like to protect them from this pest, spray them in May. An insecticide with systemic activity will give the best control.

Another insect that can do some serious damage is the bagworm (*Thyridopteryx ephemeraeformis*). Bagworms are the larvae of moths and damage mostly conifers, but I have seen them on other trees and shrubs. They are a stealth insect, doing damage that is not really noticed for a year or more, but eventually brown patches will appear in the foliage. These larvae carry their bags around with them, rarely leaving the bags. The bagworm pupates in late summer and the males emerge as black moths and set about mating with the females through an opening at the base of the bag. The female lays 500 to 1,000 eggs inside the bag and then dies.

Control of this pest is best done by picking off the bags and destroying them. The bags are made of an unbelievably tough silk and covered with bits of leaves and twigs from the host plant. For heavier infestations, spray with an insecticide in late spring, as soon as the caterpillars start feeding.

Consult your local Cooperative Extension office for recommendations on types of sprays and remember to always read label directions and use any chemical judiciously.

Virginia Gardening with Jim May is brought to you by the Virginia Green Industry Council and the Virginia Department of Agriculture and Consumer Services